

# Impact of olive oil and honey on healing of diabetic foot: a randomized controlled trial

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**Background:** This study aimed 1) to examine the impact of honey on diabetic foot; 2) to examine the effect of olive oil on diabetic foot; and 3) to compare the impact of honey and olive oil in the healing of diabetic foot.

**Methods:** In this randomized controlled trial, 45 patients took part. Patients were randomly assigned to three groups. In the honey group, the wound was dressed using gauzes with honey daily for 1 month. In the olive oil group, the wound was dressed using gauzes with olive oil (4 mL) daily for 1 month. Patients in the control group received usual dressing. Wounds were assessed before and after intervention using the Wagner scoring system and the checklist of diabetic foot healing (where a higher score indicates better wound healing).

**Results:** Demographic characteristics of patients in the three groups were similar. Mean scores of tissue around the wound, wound grade, wound drainage, and wound healing were similar before intervention in all three groups. After intervention, mean score of tissue around the wound, wound grade, wound drainage, and wound healing were significantly higher in patients in the honey and olive oil groups compared to patients in the control group.

**Conclusion:** The results of this study reveal that honey is as effective as olive oil in the treatment of diabetic foot. Given the few studies on this topic, further investigation is needed.

**Keywords:** foot ulcer, olive oil, therapeutic use, honey

## Introduction

Diabetic foot is a serious complication of diabetes, which can result in prolonged hospitalization and amputation of the lower limb in many cases.<sup>1</sup> Studies have shown that more than 15% of people with diabetes suffer from diabetic foot.<sup>2</sup> The annual incidence of diabetic foot is estimated at 25–80%.<sup>3</sup> The worldwide prevalence of diabetic foot has been reported to be 4–27%.<sup>4</sup> In developed countries, more than 5% of people with diabetes suffer from diabetic foot, and 20% of healthcare resources are spent on the care of diabetic foot. In the USA, the cost of diabetic foot is 7,000–10,000 USD, and this figure is increased by 65,000 USD in complicated cases needing amputation, which indicates the high costs of healthcare.<sup>5</sup>

Diabetic foot results from ischemia, neuropathy, and infection. Despite medical and surgical advances in recent decades, problems related to diabetic foot are the most important complications of diabetes. It has also remained a health issue and is considered the greatest risk factor for non-traumatic amputation in the foot.<sup>6</sup> Lack of healing of diabetic foot can result in infection, gangrene, amputation, and even death.<sup>7</sup> Diabetic foot heals infrequently and affects lifestyle, social activities, health, and quality of life in patients and their caregivers.<sup>8</sup> It can also result in increasing